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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,331	02/08/2002	Sohel Anwar	201-0644 (VGT 0270 PA)	6566

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SOUTHFIELD, MI 48034

EXAMINER

KRAMER, DEVON C

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/071,331

Applicant(s)

ANWAR, SOHEL

Examiner

Devon C Kramer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1) The amendment filed November 25, 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Applicant has changed most of the equations present in the original specification. These changes appear not to be obvious modifications of the equations or substitutions for equivalent variables.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 103***

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3) Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al (5657229) in view of Grote et al (6293632).

In reference to claims 1, 7 and 14, Naito et al provides a control system for an automotive vehicle having a wheel and wheel brake comprising: a wheel speed sensor (25a) generating a rotational speed signal; and a controller (37) coupled to the wheel speed sensor, said controller determining a vehicle speed (25), calculating wheel slip

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based upon the vehicle speed and the rotational speed, estimating a normal force on the wheel (abstract), calculating a modified brake torque signal in response to the wheel slip, coefficient of friction and the normal force, and actuating the wheel brake in response to the modified brake torque signal. Though Naito et al teaches using the coefficient of friction in calculating the modified brake torque, he fails to teach using an approximated friction slope curve, friction gradient, or change of friction over time.

Grote et al teaches a calculation of a torque where a variable in the equation is an approximated friction slope curve. (Col 10 lines 15-20)

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the calculation of modified brake torque of Naito et al using a friction slope curve as taught by Grote et al merely because using a slope curve creates more stability and can react more quickly to vehicle changes and conditions.

In reference to claims 2-3, 13 and 17, Naito et al provides a control system for an automotive comprising a vehicle speed sensor, said controller determining vehicle speed from the vehicle speed sensor (col 15 lines 8-17), wherein the vehicle speed sensor comprises plurality of wheel speed sensors.

In reference to claims 4, 8 and 15, Naito et al provides a control system for an automotive vehicle wherein said controller estimates a wheel slip and a slip angle threshold and calculates the brake torque signal in response to the wheel slip, the normal force and the slip angle threshold. (col 15 lines 19-28)

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In reference to claims 5, 6, 9, 10 and 16, Naito et al provides a control system for an automotive vehicle wherein said controller measures a wheel deceleration (32, figure 3) from the wheel speed sensor; when the wheel deceleration is above a threshold applying the modified torque. Please note that when ABS system controllers do not detect excessive slip or deceleration, a normal braking force is applied which is proportional to that of the pedal force by an operator.

In reference to claims 11-12, Naito et al provides a control system for an automotive vehicle wherein when the vehicle speed is above a speed threshold, performing calculating wheel slip based upon the vehicle speed and the rotational speed, estimating a normal force on the wheel, calculating a modified brake torque signal in response to the wheel slip and the normal<sup>^</sup> force, and actuating the wheel brake in response to the modified brake torque signal when a wheel deceleration is below a threshold. (Figure 5)

### ***Conclusion***


4) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grote et al (6450588) teaches calculating a modified brake torque.

5) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devon C Kramer whose telephone number is 703-305-0839. The examiner can normally be reached on Mon-Fri 8-4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1134.

 1/23/04  
DOUGLAS C. BUTLER  
PRIMARY EXAMINER  
HUGO

DK